

ABSTRACT

A control system of an internal combustion engine provided with a throttle valve passage air flow calculation equation by which the throttle valve passage air flow  $m_t$  is expressed as a function of the downstream side intake pipe pressure at the downstream side of the throttle valve and a cylinder intake air flow calculation equation by which the cylinder intake air flow  $m_c$  is expressed as a function of the downstream side intake pipe pressure, where said downstream side intake pipe pressure  $P_m$  and cylinder intake air flow  $m_c$  when the throttle valve passage air flow  $m_t$  found from said throttle valve passage air flow calculation equation and the cylinder intake air flow  $m_c$  found from said cylinder intake air flow calculation equation match are calculated as the downstream side intake pipe pressure  $P_{mta}$  and cylinder intake air flow  $m_{cta}$  at the time of steady operation under the operating conditions at that time is provided.